

VTF 2006

VIA Technology Forum

High Definition Digital Media Solutions from AMD

Rod Fleck June 2006



*Embracing
Digital Intelligence*

Agenda

- **What is High Definition Media**
- **Traditional Media Solutions**
- **Meeting Today's Customer Challenges**
- **Leveraging New Software Applications**
- **Extending the PC's Media Capabilities**
- **Extending PC Technology to CE Devices**

What is High-definition Media?

- **Traditional Meanings**
 - High definition gaming
 - HD video, photo, music editing
- **Meeting Present Customer Demands**
 - High-definition video playback / DVR (anytime)
 - Transcoding / compression of media
 - Multi-room media access (anywhere)
 - New media client devices (on anything)

Traditional HD Media Applications

AMD's Traditional Media Solutions

ULTIMATE PERFORMANCE



- The ultimate processor for PC enthusiasts
 - The AMD Athlon™ 64 FX processor is the ultimate processor for PC enthusiasts, breaking the limits of 32- and 64-bit performance.

PERFORMANCE



- Do more in less time
 - The AMD Athlon™ 64 X2 dual-core processor enables everyone to do more in less time by delivering exceptional multi-tasking capabilities and increased performance on digital media over similar single-core processors

Customer Benefits

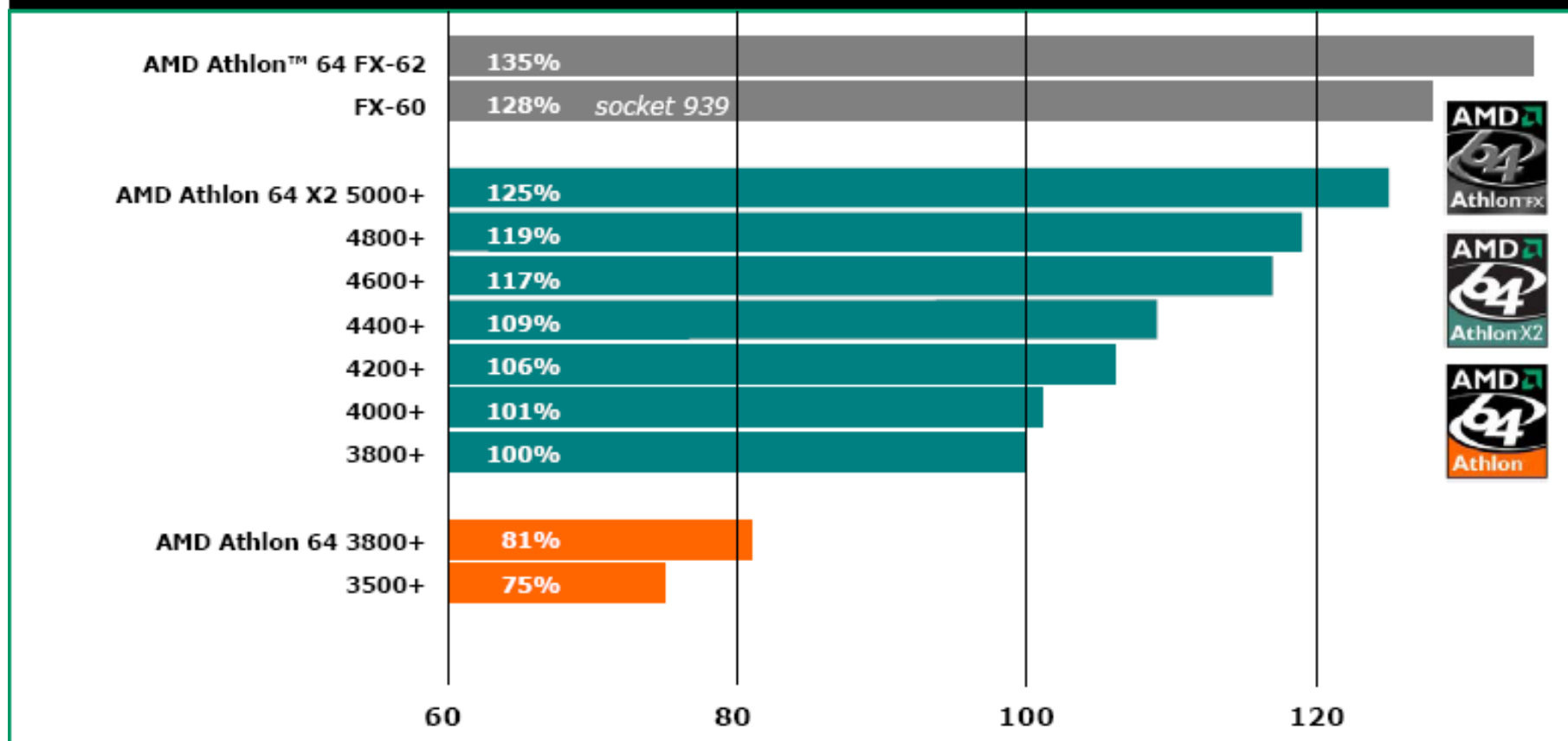
- **More realistic gaming**
- **Interactive multi-player gaming**
- **Painless Multi-tasking – media management, communication, and entertainment**
 - Example: ripping, IM, TV-window, photo editing
- **Faster multi-threaded solutions**
- **Solid Microsoft Vista Premium / Ultimate Experience**

Socket AM2

Overall Digital Media (Geometric Mean of Benchmark Suite)

AMD Athlon™ 64 Processor Performance Benchmark

Desktop Performance – Overall Digital Media



AMD Athlon 64 X2 processor model numbers indicate relative software performance within the AMD Athlon 64 X2 processor family.
 AMD Athlon 64 FX processor model numbers indicate relative software performance within the AMD Athlon 64 FX processor family.
 AMD Athlon 64 processor model numbers indicate relative software performance within the AMD Athlon 64 processor family.

Migrating Professional Solutions to Consumers

From Creation ...



**Create at the
speed at inspiration**



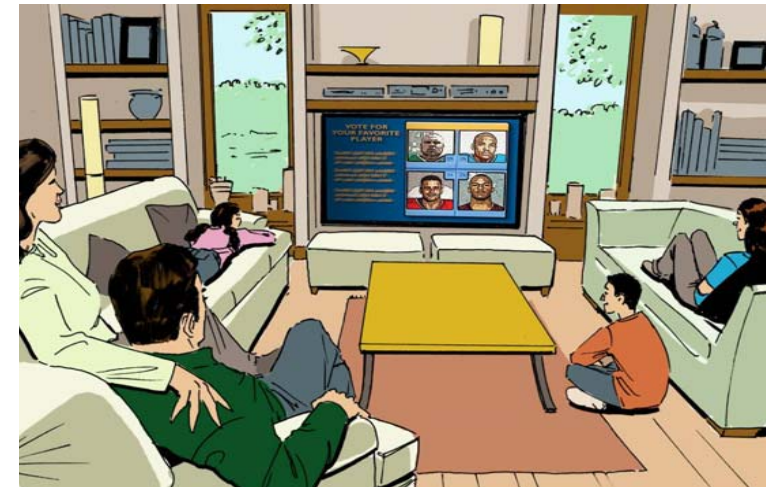
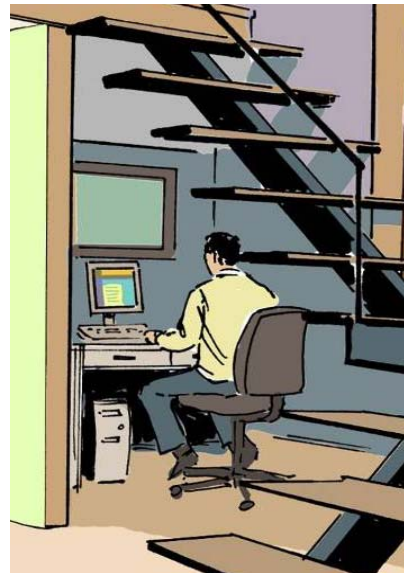
... To Consumption



**Smarter Digital
Entertainment**

Meeting Today's Customer Challenges

Customer View of Digital Life Star Trek model in the Home



Media Market Drivers

- **Music**

- People are building large libraries of digital music content
- People playing content on a variety of devices throughout their day
- Play-lists easily shared amongst friends

- **Movies/TV**

- People watching TV content when they want (time-shifting)
- High definition content becoming widely available
- New internet based content allows widest selection of media without leaving your home
- Personalized content from sports, news, widgets, RSS, blogs, and etc.

- **Photos**

- People show slide-shows to friends / family on a variety of devices
- Internet photo sharing and printing becoming common

- **Communication**

- High growth of IM / SMS, VoIP, and Video Conferences

Leveraging an Open Software Applications Environment

The AMD LIVE! Experience



A Full-Featured Media Center PC

- Ready for TRUE multitasking and advanced multimedia thanks to its dual-core processor

Entertainment Anywhere

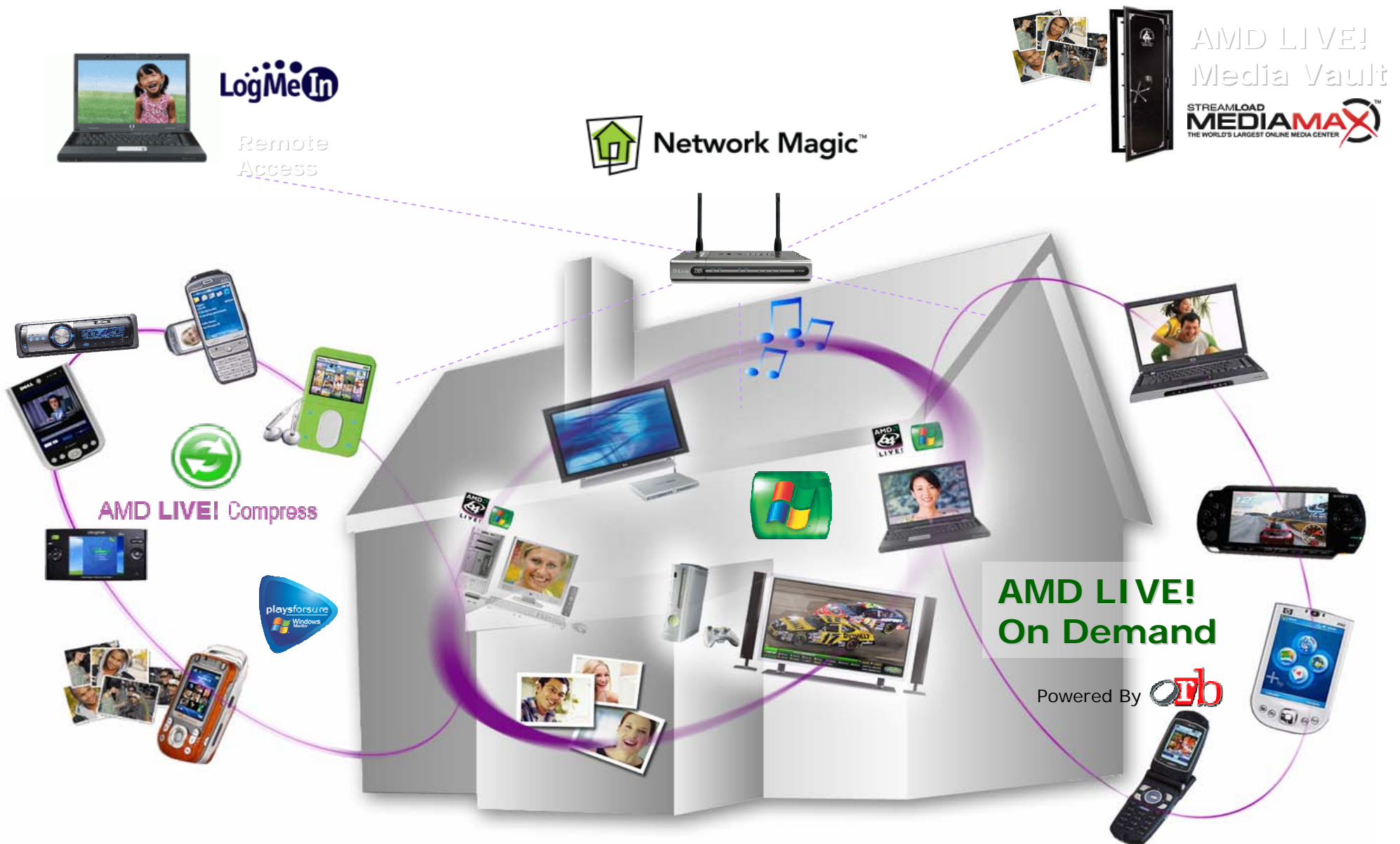
- Can access, distribute, share, and enjoy music, photos, and movies anytime, anywhere



A Consumer-Friendly Device

- Can wake up quickly, run Cool'n'Quiet, and help protect from viruses

AMD LIVE! Entertainment Suite



Initial AMD LIVE!

Entertainment Suite - @Launch

- **AMD LIVE! On Demand**
 - Supports "Entertainment Anywhere" Usage Model
 - Stream Live TV, Music, Videos, and Photos to connected devices
 - Synch Photos, Videos, and TV Shows to your Notebook for offline viewing
- **AMD LIVE! Compress:**
 - Allows Users to save up to 10 times more TV Shows and Movies
 - Reformats TV Shows and Movies, enabling them to play on more devices
 - Makes streaming of video easier and more reliable on wireless networks
- **AMD LIVE! Network Magic**
 - Easily set up, manage and secure your home network
 - Makes printer and file sharing easy
- **AMD LIVE! Media Vault**
 - Free and Secure Online Storage for Digital Photos and Music
 - Automatically backs up "My Photos" and "My Music" folders
- **AMD LIVE! LogMeIn**
 - Allows users to remotely access their AMD LIVE! Machine
 - Data Migration from old PC to AMD LIVE! PC included at no charge
 - Move content between around, install software, reboot machine, etc

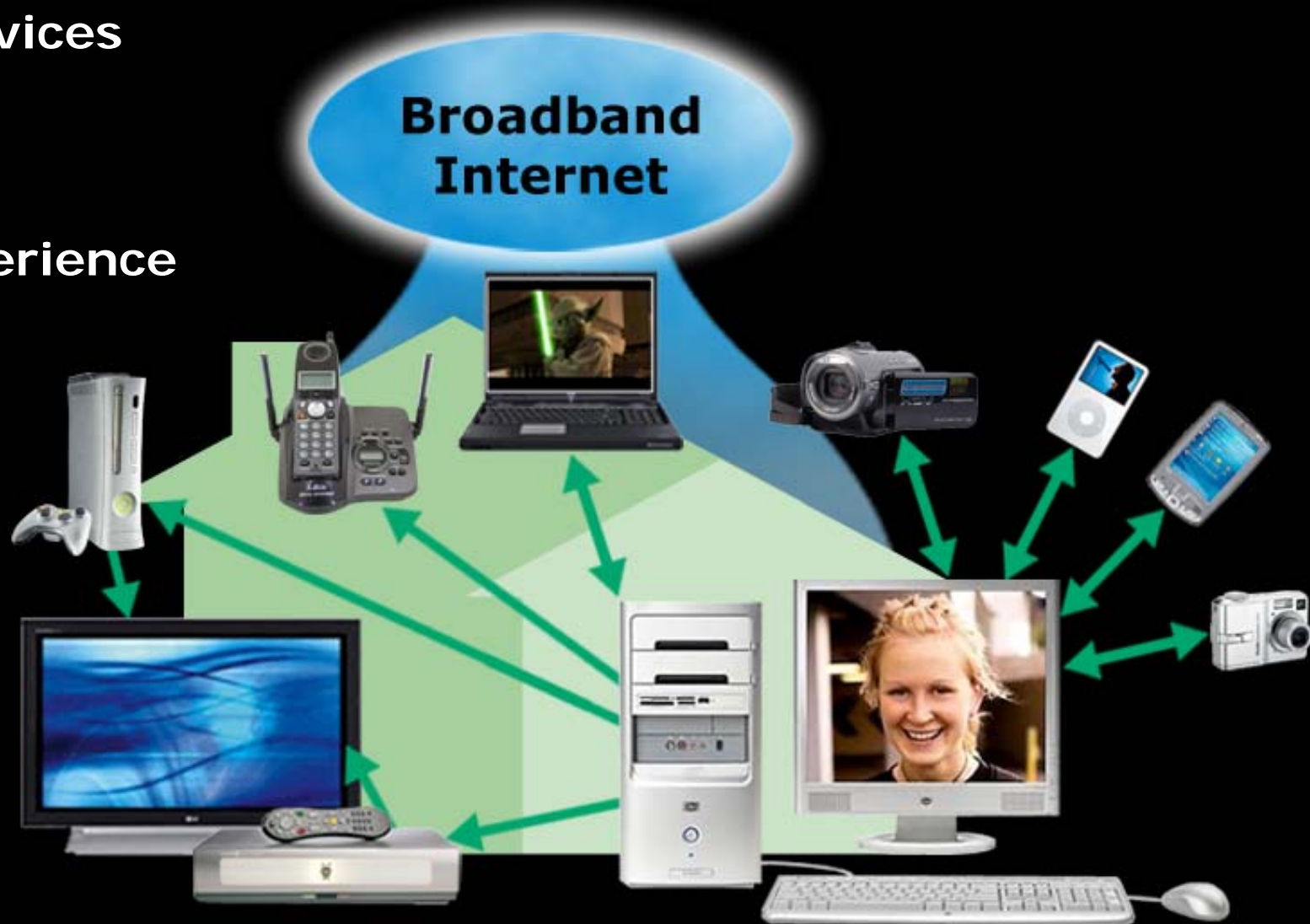
Extending the PC's Media Capabilities

PC enhances CE devices

**Transforms 2' PC
experience to 10'
entertainment experience**

**Combines Internet
& broadcast
content to
heighten, not
disrupt, the TV**

**Media
applications
elevate the
TV experience**



"SMARTER CHOICE" Digital Solutions

(Locally Stored for Availability Anytime)



(Wired or Wireless, Native or Streamed)



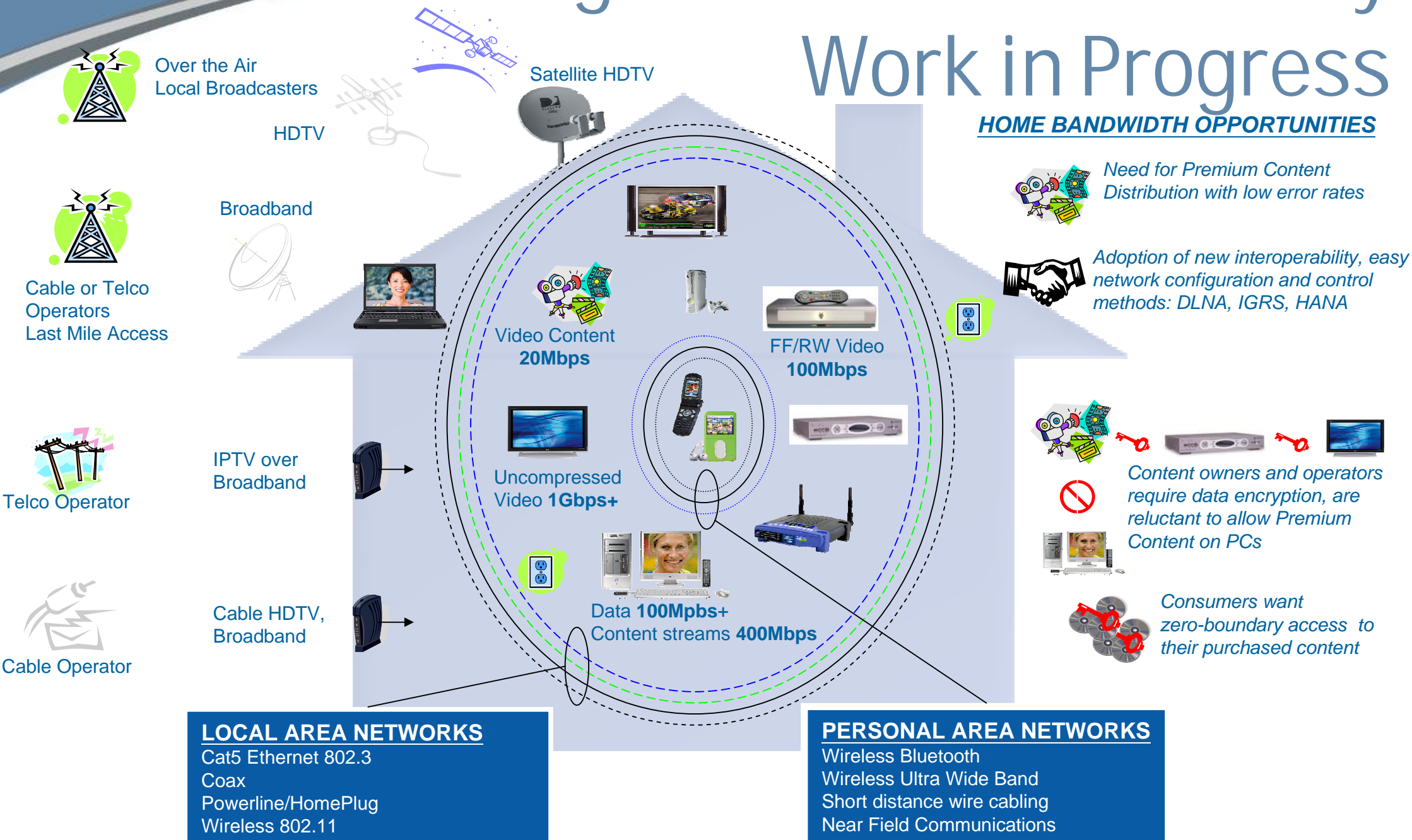
Streaming / Online

(Wireless/Cellular)



Decentralized Media Device Model Leveraging Open Standards and Multiple Partners

Digital Home Connectivity Work in Progress



Extending PC Technology to CE Devices

Multiple Companions to HD-TV

Extend PC Capabilities
to Traditional CE Devices



Theater-in-a-Box



Network DVD Players



Set-top Boxes



Extend CE Capabilities
to Traditional PC Devices



MCE PC

HD-TV
Companions



Theater in a Box Convergence

- Easy to use - reliable
- Good sound / video
- Works right of the box
- Easy to connect to other CE devices
- Looks great - fits in home
- Small - quiet
- Fairly low cost (\$199-\$999)



Set-top Box Convergence

- Set-top boxes are incorporating DVD and DVD authoring capability
- Set-tops are incorporating photo slide-shows and music playback solutions
- TiVo provides access to TV content from PCs and remote control of recording
- Many have access to most premium content



Present CE Convergence Device Weaknesses

- **Still need a number of other boxes**
 - Set-top box, DVR, game machine, VCR, Amplifiers
 - Issues for single remote, ease of set-up
- **Most devices can not connect to other Ethernet based devices**
- **Many do not support Hi-definition video**
- **Quality (audio / video) varies wildly across many vendors / models**
- **Many formats of video are not supported**
- **No way to add capability**

x86 Digital Home Advantage



Bringing New Services to CE Devices

Enhanced TV Services

EPG/IPG
PVR
Digital TV
HDTV
Personalized Recommendations
One-button access to recording
Mobile phone DVR/PVR recording
Localized Content
Commercial-free music stations
Universal remote controller

Interactive TV Services

Show information
Parental control features
Pay-per-view
Video-on-demand
Multiple camera angles for sports and concerts
Customized news/sports tickers
One-button access to weather, sports, news
Mobile TV
Remote access to personal TV service

Communications Services

Make Video calls
Caller ID on TV
Unified messaging
Voice mail portal on TV
Instant messaging on TV
Send/receive e-mails

Multimedia/Entertainment Services

Browse the Internet
Gaming (downloads, multi-player)
View/share photos via TV
On-demand music services
Whole-house music at TV



Commerce Applications

Gambling
Instant product ordering via TV
Banking via TV
Check/trade Stock via TV

Advertising Applications

Interactive advertising
Audience measurement
Personalized advertising

Home Management/Monitoring Services

Monitored security
Automatic sprinkler system
Web security cameras (baby cam/nanny cam)
Programmable thermostat
Lighting control system
A pool control system
Central home control
Front door camera monitoring
Door/window sensors and Outdoor Motion Sensors
Arrival and Departure Notifications
Flood and Leakage Detection
Energy Management
Voice Activated House-Wide Control
Smoke and carbon monoxide detection
Remote access to home systems
Swimming pool monitoring system

Healthcare Applications

Vital sign Monitoring
Tele-nursing

AMD Initial CE-like Media Solutions

First Generation (2005)



- AMD Reference Design
 - Dealt with Heat / Noise
 - CE-style / User Interface
 - Integrated AV connectivity
 - Easy modification of Case, I/O, Drives, CPUs, and etc.

Yakumo mediaXline II A1 YX

Home Entertainment System

The first PC that looks like your DVD player!

- Jukebox | DVD recorder with hard disc drive
- TV Tuner
- Internet terminal
- Game console
- Personal Computer



Yakumo recommends Microsoft® Windows® XP



Introducing Energy Efficient AMD Processors



Energy efficient AMD desktop processors:

- Can help OEMs design small form factor (SFF) PCs that take up less space and are more aesthetic, giving them the opportunity to provide differentiated and competitive solutions to their customers.
- Can reduce the noise and heat emitted from systems to extend the longevity of their PCs while offering consumer and business users a quieter, more pleasant experience in their offices or living rooms.
- When combined with AMD's award-winning Cool'n'Quiet™ technology, can enhance system energy efficiency.

AMD Energy Efficient Processors

Delivering Improved Performance-Per-Watt

- **Reducing Energy Costs**

- Energy efficient AMD desktop processors provide greater performance-per-watt over AMD's standard power desktop processors to reduce commercial and consumers' energy bills.
 - 65W AMD Athlon™ 64 X2 dual-core processors provide up to **37% greater performance-per-watt** than standard power (89W) processors
 - 35W AMD Athlon™ 64 X2 dual-core processors provide up to **154% greater performance-per-watt** than standard power(89W) processors



- **Enabling Small Form Factors**

- Energy efficient AMD processors enable OEMs and the channel offer small, sleek, aesthetically pleasing entertainment PCs and commercial slim-line and blade PCs



- **Consumer and Enterprise Demand Quiet and Cool PCs**

- By using less electricity, Energy efficient AMD desktop processors can lead to lower energy consumption, contributing to an improved global environment.

Getting to Better Solutions

- **Make products more delightful**
 - All CE products must be easier to use (not just PCs)
 - All products must have instant on/off
 - All products should have automatic network discovery
 - Networking products need QoS to guarantee no frame drops
 - Acoustics that are unobtrusive
 - All products must have a simple and effective User Interface
 - Require unified remote control that configures automatically
- **Work with the experts**
 - Home installers, builders can play pivotal role
 - Service branches of retail outlets also key